

Alcohol—Impairment & Driving Skills

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<u>Skill (reference)</u>	<u>Impairment Level</u>
REACTION TIME	
Simple reaction time	.03
Choice reaction time (requires decision)	.03
Complex reaction time	.07
TRACKING	
Pursuit tracking	.02
Compensatory tracking	.03
Multiple tracking	.04
CONCENTRATED ATTENTION	
Attention	.07
DIVIDED ATTENTION	
Detection of peripheral stimuli	.02
Visual reaction time	.03
Choice reaction time	.04
Response to peripheral stimuli	.04
Response to central stimuli	.04
Visual search	.05
Visual recognition	.07
INFORMATION PROCESSING	
Interpretation of signals	.05
Visual information processing	.06
Information processing rate	.07
Information registration	.07
OPTOMETRIC VISUAL FUNCTIONS	
Glare recovery	.01
Flicker fusion	.03
Visual acuity for distance	.04
Smooth pursuit eye movement	.05
Double vision	.05
Contrast sensitivity	.05
Stereoacuity	.05
Depth perception	.08
Distance judgement	.08

PERCEPTION	
Reaction (to motor) time	.02
Peripheral vision with central task	.04
Time perception	.04
Perception time for visual stimuli	.05
Visual movement sensitivity	.08

PSYCHOMOTOR PERFORMANCE	
Coordination	.02
Motor performance	.06

DRIVER PERFORMANCE	
Vehicle alignment	.03
Tracking	.03
Steering	.03
Gear changing	.03
Braking	.03
Spatial judgement	.04
Impaired driving skills	.04
Emergency braking response	.04
Curve negotiating	.05
Speed changes	.07
Distance judgement	.07
Glare adaptation	.07
Lateral position error	.07
Time to make steering correction	.07

DRIVING SKILL (REFERENCE #)

IMPAIREMENT THRESHOLD

Reaction Time

Simple reaction time .03

Time from decision to the onset of the reaction response.

Choice reaction time .03

Time to make response choice-braking, steering, sounding horn.

Choice reaction time errors .05

Subject makes errors in selecting the appropriate response from a number of options available.

Complex reaction time .07

Reaction to stimulus when there is not a simple choice of response.

Tracking

Pursuit tracking .02

Operator must keep vehicle within marked lanes as his/her vehicle follows another moving vehicle, or must keep his/her vehicle aligned behind the leading vehicle.

Tracking .03

Ability to keep vehicle on traveled part of road and avoid swerving across fog line or crossing the center line or into another lane of travel.

Attention

Concentrated attention .07

Ability to focus on roadway and maintain vigilance and forward gaze.

Divided attention—detection of/response to peripheral stimuli .02

Ability of operator to detect stimuli outside the central field of vision (peripheral view) while performing another task or processing information.

Visual reaction time .04

Response to peripheral stimuli .04

Response to stimulus outside cone of acute vision (+/- 5 degrees from forward).

Response to central stimuli .04

Impaired response to stimulus within acute field of vision.

Visual search .05

Ability to maintain searching patterns for objects on or about the roadway.

Visual recognition .07

Ability to recognize objects after they have been perceived.

Information Processing

Interpretation of signals .05

Ability of the operator to interpret brake lights, traffic signals, flashers, etc. is impaired, even though the operator perceives the signal.

Comprehension .05

Subject cannot accurately comprehend what has been perceived, and may misinterpret stimulus or be unable to process the information.

Visual information processing .06

Recognition and decision-making ability, using visual information.

Information processing rate .07

Time to process from the point of perception to the point of recognition.

Response selection	.07
Ability to make the best response to a visual stimulus, thus giving the optimum chance of avoiding a dangerous situation.	
<u>Optometric Visual Functions</u>	
Glare recovery	.01
Time for eyes to recover from a one-time glare from oncoming traffic.	
Double vision, other vision impairment	.05
Ability to focus and perceive an image clearly, thus affecting recognition of an object as being in a dangerous position.	
Contrast sensitivity	.05
Ability to “see” an object, based on the contrast of the object with the background or environment.	
Stereoacuity	.08
Ability to focus both eyes sharply on an object, thus affecting perception and recognition of distance between vehicle and object.	
Stimulus detection	.07
Ability to detect stimulus so a decision can be made to react.	
Dynamic visual acuity	.08
Sharpness of vision when viewing moving objects.	
Depth perception	.08
Ability to determine distance between subject (and subject’s vehicle) and object being perceived.	
<u>Perception</u>	
Reaction (to motion) time	.02
Slow reaction to movement or to the rate of motion—applicable to cases where pedestrian is crossing in front of vehicle.	
Peripheral vision with central task	.04
Limited peripheral vision when driver is making driving decisions.	
Time perception	.04
Subject has a distorted perception of time, and may feel that situation is occurring in slow motion, or may portray a distorted perception of time in describing a situation.	
Perception time for visual stimulus	.05
Time to “see” pedestrians.	
Visual movement sensitivity	.08
Limited ability to sense pedestrian’s or vehicle’s motion or rate of motion.	

Driver Performance

Coordination .02

Motor coordination is impaired.

Motor performance .06

Ability to perform motor tasks, movements, and other reactions.

Vehicle alignment .03

Vehicle suddenly tracks off roadway or crosses fog or center line, or is driving in breakdown lane.

Impaired tracking, steering, braking, gear changing .03

Basic driving skills are impaired.

Emergency braking response .04

Operator is not fully able to execute an emergency braking action in response to danger or necessity stimulus.

Spatial judgement, impaired driving skills .04

Ability to judge space between vehicles, or vehicle and object is impaired, and general driving skills are impaired to some extent.

Curve negotiation .05

Operator cannot steer around curve, or is impaired in ability to judge steering, speed, etc. to successfully negotiate a curve in the roadway.

Speed changes .07

Operator cannot adjust to speed changes or make appropriate speed changes in his/her vehicle in response to driving demands.

Distance judgement .07

Ability to judge distance is impaired.

Glare adaptation .07

Adaptation to glare from oncoming vehicles' headlights is reduced, and operator is unable to focus on roadway or perceive objects or stimuli in the roadway environment.

Lateral position error, steering correction time .07

Driver operates in the wrong lane, or in the breakdown lane; time to realign the vehicle.